

ABSTRACT OF THE DISCLOSURE

[0035] A turbine engine rotor component, such as a compressor or turbine disk or seal element, is protected from corrosion by implanting aluminum or chromium ions, or mixtures thereof, on the surface of the component. Additional metal ions, such as rare earth and reactive elements, may also be implanted on the surface of the component. The component may be heated in a nonoxidizing atmosphere at a specified temperature and time to diffuse the ions into the surface. The component is typically then heated or maintained at an elevated temperature in the presence of oxygen to form an oxide coating on the surface of the component.